

## Atmospheric reactivity of functionalized organic nitrates

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Organic nitrates are important species of the tropospheric reactive nitrogen budget. They are mainly formed in NO<sub>x</sub> rich air by the degradation of hydrocarbons initiated by OH (daytime) and NO<sub>3</sub> (nighttime) radicals. Organic nitrates lifetimes are in the order of several days or weeks (1, 2). Thus, they may behave as reservoirs for reactive nitrogen by undergoing long-range transport in the free troposphere before decomposing to release NO<sub>x</sub> in remote regions. They, therefore, play a key role in the distribution of the reactive nitrogen and consequently in the ozone formation and distribution in remote areas. Among these organic nitrates, polyfunctional species such as  $\alpha,\beta$ -hydroxynitrates and ketonitrates can be formed(3).

Several experimental works have been performed on the alkyl nitrates reactivity with OH radicals and their photolysis (1,2,4) but very few studies have been carried out on functionalized organic nitrates (hydroxynitrates, dinitrates, ketonitrates, etc)(5, 6). These last compounds have yet been shown to contribute significantly to the NO<sub>y</sub> budget in rural and urban areas (7). Moreover, recent modelling studies have pointed out that the ozone budget in rural area is very sensitive to the fate of functionalized isoprene nitrates (8, 9).

Thus, a study aimed at obtaining a better knowledge and understanding of the functionalized organic nitrates reactivity in the atmosphere is in progress and the first kinetic results on the reactivity and photolysis rates of a series of ketonitrates will be presented here.

### References

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